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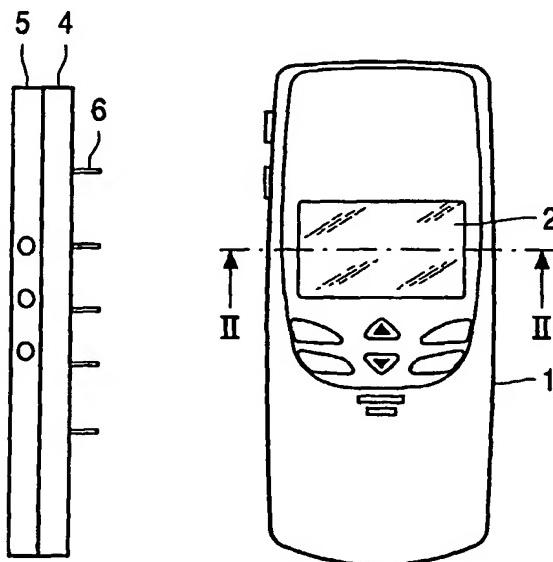
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[Continued on next page]

(54) Title: APPARATUS WITH DISPLAY



(57) **Abstract:** A display system makes use of removable or detachable display panels (10, 14), which are preferably rollable, such as cartridges which can be discarded after the display stops functioning. The actual display has a two part housing (4,5), one of which contains the removable or detachable display panel. This housing (4) contains electronics like a battery, input devices (buttons, joystick), a radio frequency (RF) antenna and chips and possibly memory and processors. The other housing (5) contains the display panel (14) or substrate (10). If the display panel (14) or substrate (10) tears, which is not unlikely for flexible, thin, displays, only the panel has to be replaced and not the complete device.



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**B. FIELDS SEARCHED**

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, IBM-TDB

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/47363 A (E INK CORP) 13 June 2002 (2002-06-13) page 5, line 21 -page 9, line 15 page 14, line 28 -page 17, line 2; figures 1-3 ---	1-34
X	EP 0 860 969 A (NOKIA MOBILE PHONES LTD) 26 August 1998 (1998-08-26)  the whole document ---	18,20, 24-27, 31-34
E	WO 2004/001704 A (KONINKL PHILIPS ELECTRONICS NV ;VAN RENS BAS J E (NL)) 31 December 2003 (2003-12-31)  the whole document ---	1,5-12, 15-18, 20,24-27

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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- "&" document member of the same patent family

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	EP 0 302 189 A (TELEFONBAU & NORMALZEIT GMBH) 8 February 1989 (1989-02-08) the whole document -----	13,14, 19, 28-30,34
A	DE 94 16 849 U (SIEMENS AG) 2 March 1995 (1995-03-02) the whole document -----	13,14, 19, 28-30,34

## INTERNATIONAL SEARCH REPORT

Inte PCT	I Application No 03/04055
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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 0247363	A	13-06-2002	AU EP WO US	3061002 A 1340360 A2 0247363 A2 2002090980 A1		18-06-2002 03-09-2003 13-06-2002 11-07-2002
EP 0860969	A	26-08-1998	FI EP JP US	970755 A 0860969 A2 10257143 A 2001034249 A1		22-08-1998 26-08-1998 25-09-1998 25-10-2001
WO 2004001704	A	31-12-2003	WO	2004001704 A1		31-12-2003
EP 0302189	A	08-02-1989	DE AT EP ES	3726225 C1 108931 T 0302189 A2 2060618 T3		04-08-1988 15-08-1994 08-02-1989 01-12-1994
DE 9416849	U	02-03-1995	DE	9416849 U1		02-03-1995